

With the Author's best wishes
24

CHRONIC RHEUMATISM

AND

ITS COUNTERFEITS.

BY

J. MILNER FOTHERGILL, M.D.,

SENIOR RESIDENT MEDICAL OFFICER, LEEDS DISPENSARY.

EDINBURGH: PRINTED BY OLIVER AND BOYD.

MDCCCLXX.

REPRINTED FROM THE EDINBURGH MEDICAL JOURNAL FOR FEBRUARY 1870.

CHRONIC RHEUMATISM AND ITS COUNTERFEITS.

THE name rheumatism—or, as it is now more precisely termed, chronic rheumatism—has been used as a generic term for persistent pains, unaccompanied by constitutional disturbance, irrespective of their causation, and has covered an unknown amount of carelessness and ignorance; while, as a verbal placebo, it has often been used to justify a do-nothing treatment, sometimes very reprehensible. This is less true, however, of the present time than of the past; and now an apyrexial condition, accompanied by varying amount of pain, is found to be the result of many other causes as well as the poison of rheumatism. It may be well to state at once what that poison is, assuming that rheumatism, or what we call rheumatism, is dependent on an altered condition of the blood: in fact, is the external expression of a material in the blood, either morbid, or normal in excess. Lactic acid is this material in the belief of most observers, but not of all. One thing, however, seems universally admitted, namely, that it is an acid. Lactic acid is a product of assimilation, and is the normal result of the digestion of amylaceous or saccharine compounds, each molecule of grape-sugar ($C_{12}H_{12}O_{12}$), being broken up into two molecules of lactic acid ($2C_6H_6O_6$); and it has been further stated that the oxidation of lactic acid is the true form of hydro-carbonaceous combustion. This goes on through the agency of the soda in the blood, and is imitated in the reduction of a salt of soda and a vegetable acid, of whatever kind, to a carbonate, in which form it is eliminated by the kidney. “A combustion of an acetate or tartrate, consuming oxygen and producing carbonic acid, is, in all probability, strictly analogous to a natural burning of lactate of soda, always going on in the blood for the maintenance of the animal heat.”¹ This theory is ingenious, but will require further corroboration before it is universally accepted: it seems very probable at any rate. This, however, is certain, that lactic acid is a normal product of the body, and that rheumatism is usually supposed to be the result of its presence in excess. Lactic acid is found in sweat, and the natural emunctory of its excess is the skin. Excess of lactic acid in the

¹ Headland's Action of Remedies, 4th edition, p. 135.

blood may arise in two ways—one from excess of saccharine matter undergoing fermentative change, and overrunning the powers of excretion—or from normal production with defective elimination. Both forms are commonly seen; the first, however, more in connexion with acute, the latter with chronic, rheumatism. This *materies morbi* seems to have an affinity for the fibro-serous textures, and thus, in addition to its partiality for the joints, fixes on the fibro-serous textures of the heart; and from the changes thus produced by its action, do we have the great majority of our diseased and altered valves. It is not, however, confined to the fibro-serous textures, and may be muscular, neuralgic, periosteal, or sclerotic. Rheumatism, in its causation, has some curious relationships. It has a singular and most inexplicable connexion with the urethra. Acton says, “It would almost appear that rheumatism enters the system by the urethra. Rheumatism is produced by the passage of sounds and lithotriptic instruments as well as by the application of foreign matters. Urethral inflammation only is requisite to excite rheumatism in those who are hereditarily disposed to it. In gonorrhœal rheumatism, arrest of the discharge is often the readiest cure for it, though at other times it seems to follow the arrest of the discharge.” Of this curious connexion no explanation as yet has been given. Another curious connexion exists between rheumatism and atmospheric changes: the joints of the rheumatic are often as certain indications of coming changes in the weather as barometer or aneroid. Some, in fact, only suffer from pain at these periods of change. Rheumatism is an ailment connected with families, and a predisposition may be handed down for generations. Rheumatism is often a troublesome inheritance, and, in those so hereditarily predisposed, slight causes are sufficient to excite a very persistent attack. It is commonly strong and otherwise healthy families with which rheumatism is connected. Mitchell of Philadelphia, and after him Day in England, has advanced the idea that acute rheumatism is, in its origin, cerebro-spinal, and allied to cerebro-spinal meningitis; this view seems untenable, as the one is rarely fatal, the other is commonly so. Rheumatism seems rather to be associated with the organic than the cerebro-spinal nervous system.

The symptoms of chronic rheumatism are such as might be expected from a blood-poison, and its manifestations are various. “The affection may show itself in the joints, giving rise to stiffness, a dull aching, and pain produced by motion, but without heat, obvious swelling, tenderness, febrile excitement or marked sweating; or it may implicate the muscles in various parts of the body, occasioning stiffness as well as pain when moved; or it attacks both joints and muscles, or is seated chiefly in the sheaths of the nerves, leading to what is called neuralgic rheumatism; of which, for instance, sciatica often affords a striking instance.”—(Da Costa.) One property it has of making rapid metastases, of suddenly quitting one

part to manifest itself in another ; on other occasions it lingers round one part with great pertinacity. Whatever form it assumes, so far as my experience goes, rheumatism is always accompanied by the presence of an acid, both in the secretions and excretions ; and of this condition the readiest evidence is furnished by the saliva. More readily accessible, and of not normally so decidedly acid reaction as the urine, I have been led to prefer it for testing purposes. Its normal reaction is faintly acid, but frequently it is neutral, and is always so during the alkaline tide of digestion of Roberts. If the saliva gives an acid reaction, as shown by the reddening of litmus-paper, at all decided, especially during digestion, the presence of an acid in excess may be at once inferred. As to whether that acid is lactic or uric, it cannot furnish evidence. When the reaction is not acid, the complaint is essentially neuralgic and not rheumatic, and a clue is at once furnished to the more exact treatment. Where there is decided acidity, relief is always afforded by alkalies. Pain is often the prayer of a nerve for healthy blood (Romberg) ; and, when so occasioned, is most readily and certainly treated by removal of that cause, where practicable. An acid condition of the system is often seen in growing children, and is often termed rheumatism ; this is the “growing fever” of Lugol. In some children, and indeed adults, who suffer from a deficient power of cell-formation—*i.e.*, the strumous—the presence of an acid is usual ; it is, however, generally uric acid, and is shown by calculus, gravel, nephria, acid sweats and secretions, injured teeth from the constant presence of an acid acting on the carbonate of lime, sour breath, etc. ; and this explains the efficacy of potash in these conditions. Potash acts as a veritable hæmotic and blood restorative, by aiding in the elimination of the uric acid, and thus producing a more healthy blood. “Thus the uric acid which constitutes the urinary excretion of birds, whose habits are active and temperature high, and whose blood is highly oxygenated, cannot arise from insufficient supply of oxygen, but must depend on some peculiarity in the tissues ; so also in man, uric acid may be the effect of defective nutrition or primary assimilation, and not merely of imperfect metamorphosis or oxidation. The clinical history of the so-called uric acid diathesis supports this view, and shows that the remedy, in many cases, must be sought, not in the promotion of oxidation, but in modification of the nutritive processes.”—(Broadbent.) In this condition potash, by relieving the blood of its *materies morbi*, and thus improving its quality, allows of a more perfect tissue-nutrition in which the blood-glands share, and are thus enabled to perform a more perfect chylous elaboration. Potash is found in the muscles, soda in the blood ; potash is more associated with tissue-metamorphosis, soda with respiratory change. Potash is the remedy in excess of uric acid, soda is just as useful with lactic acid. Urate of soda (chalkstones) is insoluble ; urate of potash is a readily soluble salt. Pain, general or local, is the usual accompaniment of deficient or defective blood. Whenever the

blood is altered from its normal condition we have pain; thus in syphilis, ague, lithiasis, rheumatism, anæmia, etc., we have local manifestations of a general condition. Why, however, a blood-poison should manifest itself in a nerve or group of nerves, as is the case in rheumatic and other neuralgiæ—why the general condition should make itself apparent in one locality, or inversely—how it happens that one portion of the organism alone affords manifestations of a general systemic blood-poison,—is explicable enough in the case of injury or excessive action; but it is not confined to these localities, and may show itself in a manner as yet inexplicable. This is deserving of attention, and, if explained, may afford a clue to a deeper insight into the *modus operandi* of morbid action in its early stages than as yet exists. We know, from experience, that the pain resulting from these causes—the external or outward visible sign—is relieved by mercury, iodide of potassium, quinine, potash, iron, arsenic, etc., according to the cause; and that in these conditions these drugs are, one and all of them, true hæmatics—*i.e.*, they restore the blood to its normal condition.

A peculiarity of rheumatism is that, when localized, it is frequently relieved by motion; the rheumatic whose first movements are productive of agony, will get along pretty comfortably after he has been moving some time. This is well known in horses the subjects of “jack spavin,” which is really a rheumatic exostosis. Other rheumatics can work all day in comparative ease, but toss nearly all night instead of sleeping. This is often the case with the hands and arms of washerwomen; it may, however, be made a question whether this is always rheumatism or not; for it may be often a form of myalgia—but of that anon. When thus localized, it affects certain parts, and there it sticks; in time changes of structure go on, and the sufferer, in addition, becomes crippled. This change may occur variously—a bony exostosis may bind together two sections of a joint, and, though most usual in compound joints, may occur in the lumbar vertebræ;—it may lodge itself in the tendons, and produce contraction and deformity; or it may lodge in the sheaths of nerves till effusion takes place, and, by compression, produce partial paralysis, as is often seen in sciatica. In this last condition the loss of power, and with it loss of sensation, complicates the diagnosis with some pressure or lesion in the nerve high up nearer the trunk. There is a great tendency for rheumatism to lodge itself in parts that have been injured—as a dislocated joint, a bruise or crush, or to linger round a pleuritic adhesion; and in accidents occurring to the congenital rheumatic, the painful consequences are often rather to be dreaded, and if possible averted, than the injury itself. As a blood disease it may show itself anywhere; it may attach itself to one place and persistently remain; or it may flit about without a fixed residence, and may simulate many other disorders—and it may be simulated in its turn. With local affections it is often confounded, and too frequently persistent local

pains, indicative of serious mischief, may be allowed to pass unheeded as rheumatism. This is unfortunately the case, sometimes, with ulceration of the articular cartilages, and with osteal and periosteal affections; and when any doubt exists, great care should be taken to watch the nocturnal exacerbations, the shiverings, etc. In Langenbeck's "Archives," No. ix., is related a case of periostitis and osteo-myelitis of the femur, which was mistaken for rheumatism. The pain in the right shoulder, symptomatic of hepatic disease, and especially of an abscess approaching the serous surface of the liver, and the sympathetic pain down the left arm in some cases of heart disease, are often carelessly looked over, and their significance unheeded, by classing them as rheumatic. Intercostal rheumatism has included pleurisy, pleurodynia, broken ribs, herpes, neuralgia, the peculiar pain generally of the left side found in women, and so strangely connected with menorrhagia and leucorrhœa; the pain in either side, which is intimately connected with debility and anæmia; and again is confounded with that condition of pain and soreness of the muscles developed by overwork, and attended with both muscular and cutaneous hyperæsthesia, designated by Inman "myalgia." This condition of the interosseous muscles is probably often the real condition of the washerwomen's hands mentioned above. This pain, from stretching the white fibrous tissue, usually unyielding, is most agonizing, and was empirically applied by our forefathers in the rack and other methods of torture. But beyond all other pains, localized or otherwise, spontaneous or feigned, for simulation and dissimulation, is, unquestionably, lumbago. To say nothing of its being confounded with abdominal aneurism, intra-vertebral cancer, disease of the spinal cord, renal congestion, abscess, renal calculus, nephralgia, lumbo-abdominal neuralgia, sprains, etc.; it is often assumed to be present when the patient is really suffering from "weak back"—*i. e.*, pain evoked in the muscular sense, and conveyed by the muscular nerves of sensation from the weight of the head and shoulders hanging on the erector spinæ. This state of over-tension is exquisitely painful, and is often quickly relieved by taking off that over-tension by the horizontal posture; it is intimately connected with growth,¹ and with hysteria from hyperæsthesia.² It is usually undistinguishable, locally, from congestion of the venous sinuses of the lumbar vertebræ, but the difference can sometimes be demonstrated by the treatment. For instance, the cure for lumbago, so fashionable a few years ago, by croton-oil, was really a rapid unloading of the bowels and relief to the congestion, and was not productive of any good in genuine rheumatism. On this subject, Copland states that true rheumatic lumbago is not connected with affections of the lower limbs, as cramps, numbness, pricking or lancinating pains, etc., which follow on lumbar-venous congestion. Rheumatic sciatica has included

¹ Hilton on Rest and Pain.

² Laycock, Ed. Med. Jour., vols. li. and liii.

structural lesions, neuritis, neuralgia, specific and non-specific; while rheumatism in the neighbourhood of the anterior crural nerve is often really pain produced by the compression of the nerve by a load in the cæcum. Uterine rheumatism is often a misnomer for obstructive menorrhœa, and sometimes even for carcinoma. Rheumatic headache stands responsible for a deal of diagnostic carelessness, and has thus led to a great deal of direct and indirect mischief. Rheumatism, in fact, has been made a respectable cloak for everything that is painful, from orchitis to bruises.

Non-localized rheumatism is as liable to mistake nearly as its localized congener, and is confounded with general neuralgic hyperæsthesia, hysteria, alcoholism, tertiary syphilis, lithiasis from granular kidneys, locomotor ataxy, etc. From hysteria it may be distinguished by the general aspect of the case—hysteria occurring in young females, often of hyperæsthetic temperament, or of evident delicacy, who are rarely the subjects of true rheumatism. From neuralgia it cannot easily be discriminated always. In neuralgia, however, there is no acidity of the secretions, and some rational symptoms may assist to determine the question. Neuralgia is usually connected with the distribution of a nerve or group of nerves: there is too, according to Trousseau, tenderness over the spinal process where the nerve emerges from the spinal canal and brought out by pressure; while Valleix advanced the theory that there were special “tender spots” over the distribution of the nerve. An intermediate form of rheumatic neuralgia is not uncommon—a disorder in which there may be both a rheumatic and a neuralgic element, and where the acidity is very slight—in fact, a species of hybrid requiring a treatment as composite as itself. Professor Leudet, of Rouen, has described a variety of chronic alcoholism, in which the predominant symptom is pain, which may vary in intensity, be deep-seated or superficial, and accompanied by anæsthesia or acinesia, cramp, and increased reflex movements in the lower limbs. Mr Higginbotham, of Nottingham, has described a similar condition under the name of alcoholic rheumatism, which used at one time to puzzle him greatly, but which, in time, he got to connect with alcoholic excess; and which, in fact, depended on it, being irremediable except by abstinence, and which has entirely disappeared on the sufferers becoming total abstainers. This affection, though necessitating a peculiar treatment in accordance with its cause, is a form of genuine rheumatism, as it is intimately associated with the use of fermented alcoholic liquors, where an acid is easily generated, and does not seem a concomitant on the use of distilled spirits, which not readily undergo acetous fermentation. Mr Higginbotham says that, even where structural change has gone on, relief from suffering may be obtained by abstaining from the exciting cause.

Tertiary syphilis often presents itself for treatment under the guise of rheumatism, and may be either simple chronic specific

periostitis, or, from the cachexia, may be a form of true rheumatism—*i.e.*, that an undue formation or deficient excretion of lactic acid may result from the syphilitic cachexia. If a history be vouchsafed, a suitable and more or less specific treatment may be at once adopted with a good probability of success. But when a history is not forthcoming, then a resumé of the symptoms alone will enable us to judge of the probability of a specific origin. Tertiary syphilitic rheumatism, however, evinces a decided partiality for the periosteum and shafts of the long bones, and is very generally accompanied by nodes, especially in the anterior surface of the tibia, which are almost pathognomonic. There is often, too, a more marked cachexia than is found along with non-specific rheumatism. The clavicle, humerus, and forearms are favourite seats of this form of rheumatism. As well as its favourite seats and accompanying nodes, there are evidences of skin and throat affections, a mutilated iris, etc., which will assist in forming a correct diagnosis.

Other pains, not in any way rheumatic, are not rarely confounded with it, and this is commonly the case with the pains of locomotor ataxy. Of three patients thus afflicted, under care at present,¹ two complain of “rheumatic pains” most bitterly. In these two the pains preceded any marked indications of the disease—in fact, were regarded as rheumatic pains until the other symptoms developed themselves. The pains, however, are not those of rheumatism, and differ from its pains most markedly in the intense suddenness with which they come on. In one patient the pain comes on at times like an electric flash, bringing him to the ground at once; at other times the pains are fixed, often in the knees, and persist for hours. In the other two, the aching of the limbs preceded any other indication, and was as truly rheumatic as could be; in fact, the pains, perhaps, were rheumatic along with the ataxy. Now, however, the pains are evidently not rheumatic, and are closely allied to those manifestations of pain called “spinal irritation.” In the third case, the disease was very well marked before any pain was complained of, and the pain has never been severe; but in place of paroxysms of pain there have been prolonged paroxysms of choreo-convulsive disorder of motility. These pains, in locomotor ataxy, come on in severe pangs—“stabbing, boring, shooting like lightning, flitting from one place to another in a very erratic manner, and recurring in paroxysms lasting from a few minutes to many hours.” Their suddenness is their especial characteristic, and should always put the medical observer on his guard to look out for the other indications, as loss of tactile sensibility, etc. These pains may be accompanied by a feeling of coldness, thus closely simulating some forms of rheumatism. The importance of them lies in the prognosis, as the pains of locomotor ataxy are not to be relieved by art, and the disease on which they depend is of the most intractable character. “It

¹ I am here speaking of my Westmoreland experience, when the paper was written.

is evident that, when the nerve-roots are severed by disintegration of the posterior columns, the peripheral ends can no longer transmit impressions to the cord; but their central ends may still be connected with the gray substance of the cord, and may, therefore, convey to it those irritating impressions that are caused by the process of disintegration.”—(Lockhart Clarke.) All treatment applied to the peripheral distribution of the nerves is useless, and experience has demonstrated that the only conceivable treatment—viz., of sedatives to the receptive centres—is equally ineffective. The pathological explanation of the cause of the pains, and also of their intractableness, clearly explains the diminished sensibility and numbness in the limbs beyond the lesion. Trousseau regarded these pains as the most constant precursory phenomena of the disease. It is easily understood how the pains should precede the symptoms of loss of power or co-ordination or sensation, as it is induced by the disintegrating action, before it can have gone far enough in the destruction of the fibres to be manifested in the want of conducting power, as well as why it should persist afterwards. To illustrate it by fracture of the spine: violent pains are felt above the paralyzed and non-sensitive parts, due to the inflammatory condition of the cord immediately above the compression, and marking the borderland between perfect nervous conduction and total abolition of it. When, then, rheumatic pains of a sudden or instantaneous character are complained of, great pains should be taken to make a thorough examination for the other early symptoms of ataxy.

Still more closely allied to chronic rheumatism in character, causation, and chronicity, are the pains accompanying granular or contracting kidney. This form of renal disease is essentially chronic, and carries with it a train of symptoms which as yet are not clearly understood, especially as regards the symptom chiefly under consideration here—viz., pain. It is not to be distinguished from rheumatism by any casual observation, and perhaps sometimes will escape the most careful scrutiny. Intimately associated with the retention of uric acid, thus causing an acid reaction of the secretions and excretions—a blood-poison, thus manifesting itself anywhere—its resemblance to chronic rheumatism is nearly complete. No absolute distinction can be positively drawn except from examination of the urine; but in this form of renal disease albumen is often absent for long periods together, and thus the readiest witness is wanting. The urine varies greatly, however, in quantity, and when great in quantity is usually of low specific gravity, and contains granular casts, which, however, are often few in number and not easily found. When found they settle the question as to the presence of renal disease. An absolute diagnosis is, however, not always attainable. We are then thrown back upon the rational symptoms, and the distinguishing characteristics may be found to run somewhat in the following direction:—Rheumatism is associated with the fibro-serous textures; in lithiasis the

poison has more affinity for the true serous surfaces, and is often the cause of pleurisy and peritonitis. Lithiasis more affects the muscles, and rheumatism rather the large joints. Diarrhoea, vomiting, and other affections of the mucous membranes, as bronchitis, accompany lithiasis; and in these it differs from rheumatism. Lithiasis is accompanied by headache, especially of the vertex (persistent and recurring vertical headache is almost pathognomonic of lithiasis), or the pain may be frontal. There is often, too, a want of power to collect the ideas so as to interfere somewhat with the patient's pursuits, if of an intellectual kind. In lithiasis there is a wakefulness at night, not entirely due to the pain, while frequently there is cardiac depression from the blood-poison, closely allied to that caused by the biliary acids when circulating in excess, but not characterized by such severe palpitation as occurs in biliousness. In this it differs from rheumatism. There are, too, in the skin manifestations of lithiasis; and the various pricking eruptions, and that irritable condition of the skin intimately connected with recurring erysipelas or erythema in elderly people, are part of its results. These patients are readily acted on by cold, and exposure of the face to a cold wind almost sets it in a blaze; and the cold, so called, thus caught is accompanied by an inflammatory swelling of the face,—in fact, renal dropsy of a passing character. Dr Bell, in his Lectures, states the connexion between gout and irritable ulcer, and I have known an irritable ulcer that resisted treatment for years yield in a few weeks to water-dressing, when potash and colchicum were administered internally. Except under certain circumstances, it is allied to rheumatism again in its absence of constitutional disturbance, its persistency, and its connexion with atmospheric changes, especially of temperature—to which change the sufferer from chronic renal disease is most sensitive—and in the character of its pain. One patient, whom I saw in consultation, was regarded as rheumatic, such perfect sciatica and pain in the anterior crural nerve had he, though the medical gentleman attendant had watched the urine, the specific gravity of which was sometimes as low as 1.005. There was, too, a more profound cachexia than usually accompanies rheumatism; and the result of the case pointed clearly to the poison being rather uric than lactic acid. That these two conditions of lithiasis and chronic rheumatism are intimately related, and often curiously blended, is certain; and so commonly is uric acid found in chronic rheumatism (so-called)—see Copland's article on "Chronic Rheumatism,"—and so frequently may all the signs rational and physical of rheumatism go along with evidence of renal mischief, that it may be practically impossible always to separate them. It is very desirable, however, to attempt to do so, as the one is not incompatible with recovery, or, at any rate, a fair chance of a prolonged existence, while the other is like a person slumbering over a volcano. The marked cachexia so apt to be found along with renal disease points to its being a blood-poison of

a more grave character than lactic acid. The one produces no change in the finer tissues of the eye, while lithiasis does so; these changes are revealed by the ophthalmoscope, and perhaps ultimately the absolute diagnosis will thus originate. Already the changes thus recognised may be considered to go a long way towards settling the question. The difference in the results produced by each poison on the heart is most interesting, and is not without diagnostic value. The poison of rheumatism, the consequence of altered nutrition, and intimately associated with the processes connected with tissue-nutrition, acts on the valvular apparatus by its affinity for the fibro-serous textures, puckering and disturbing the valves; whereas the blood-poison in renal mischief is related to retrograde tissue-metamorphosis, and by it is the muscular structure of the heart affected. The blood, when laden with renal derivatives, flows with difficulty, and leads to change in the driving power of the heart; hypertrophy occurring when the restorative capacity of the system is equal to such compensatory change, or a mixture of it and dilatation, or maybe simple dilatation, according as the system is more or less unequal to it. In the more grave cachexia of granular kidney, an impression haunts me that iron is more serviceable than in rheumatism. Certainly it is a great protection against the structural lesions that follow in its wake. Iron appears to have a peculiar power over blood-formation, and exercises a remarkable protecting power over both blood and tissues in chronic cachexiæ. The emunctories of lactic and uric acid are allied, and in each is this importance of keeping up the action of the skin most plainly visible. Pathology tells us that the sufferers from chronic renal disease are numerous. Dr Murchison estimated the proportion so affected, in the deaths at the Fever Hospital, at one-fourth of the whole; while Dr Dickenson found a still higher proportion in a series of deaths from accident brought into St George's. It behoves us, then, to look more carefully into the cases of chronic rheumatism, as there is ground for strong suspicion that many of our chronic rheumatics (so-called) are really sufferers from a very serious form of renal disease. Grounds there are for strong suspicion, and in many cases for absolute diagnosis; but, speaking generally, these cases are not sufficiently investigated, and it is desirable that more should be known about the rational symptoms of gouty kidney than is known at present. Lithiasis and gout may depend on one and the same poison, but the symptoms of lithiasis and typical gout are widely different. Gout is a disease of marked character—lithiasis is not so; and between the symptoms of lithiasis and chronic rheumatism mistakes are being made incessantly; and I candidly admit, that not only in many cases which were once considered rheumatic, a wider knowledge of the subject and more careful observation have demonstrated the renal origin of the ailment, and along with it in many cases an improvement in the treatment, as evidenced by amelioration of the symptoms; but also that

I do not feel very confident about being always able even yet to discriminate between them. Rheumatic gout or arthritis is due to an intermediate poison, at least so supposed, which is intimately associated with debility, either constitutional or passing, but is not usually confounded with rheumatism; and it is accompanied by enlargement of the joints affected, and by other signs peculiar to itself.

The treatment of chronic rheumatism and its counterfeits must largely depend on the diagnosis. In the localized forms of chronic pain the diagnosis settles the disease, and with it the treatment. Local applications are of great utility in the relief of pain, but cannot be considered to exercise much control over the malady itself. The unity of origin of nerve-supply to the superficial and the more deeply-seated parts directly beneath (the law of Schroeder van der Kolk) admits of external anæsthetics, giving relief to pain more intimately connected with the deep-seated parts out of direct reach, the impression made on the superficial distribution being reflected on to the morbidly-acting distribution beneath. Lint wet with chloroform under a watch-glass, opium and belladonna plasters, are more or less efficacious. The application of a strong preparation of aconite and glycerine spread on lint is more certain. Aconite, morphia, and chloroform mixed, and used as an external application, has its supporters. Subcutaneous injection is perhaps the most general favourite now. Trousseau's plan of a small ammoniacal blister dressed with morphia is not sufficiently resorted to. Flannels wrung out of hot water, and sprinkled with tincture of opium or turpentine, are useful when large surfaces are to be covered. The addition of a solution of potash to the tincture of opium is desirable when the joints are affected, as being absorbed, and directly neutralizing the irritating acid. No form of external application or sedative is to be despised, and none too confidently relied upon. When there is effusion within the nerve-sheath, and, from its compression, numbness and lack of power, acupuncture, according to Fuller, is most useful; then strychnia or galvanism to restore the conducting power. Local applications have a uniformity of character not to be found in the systemic remedies. The general treatment of rheumatism opens up a strange field of ignorance, presumption, empiricism, futility, and sometimes of something worse—*i.e.*, the consciousness of futility without the conscience to confess it. The sufferers, worn out with pain, persisting for weeks or months, will try anything and everything that will only promise them relief.

The principles on which the general treatment is to be conducted are of two kinds,—to speak scientifically,—one to rouse up the eliminant organs to get rid of the poison, and the other to prevent as far as possible the re-creation of it; and in practice these two are best combined. The natural springs, sulphur, alkaline, or iron, or combined, are the general favourites with those who can afford them; and the handsome appearance of spas and watering-places is evidence of the faith in them being widespread. We

must, however, remember that natural springs are merely solutions of soluble salts in water largely diluted, and in this is the advantage. This may be simulated artificially by adding a drink of water to the dose of medicine; and patients who cannot very well get to watering-places may often thus be brought under the influence of alkalies or iron, who could not be treated satisfactorily before. The natural waters bottled can now be readily procured for such as desire them. Baths of these medicated waters, combined with an increased temperature, are often of service. Turkish baths, hot air, vapour, and, in fact, baths of all kinds, are useful. The various drugs that have been employed are legion; they may, however, to some extent, be classified. There are diaphoretics in the front rank of eliminants, and of these opium, ipecacuanha, guaiacum, sarsaparilla, mezereon, and a host of others, are drawn from the vegetable kingdom; while of minerals, sulphur, antimony, mercury, arsenic, and iodine, are the chief; diuretics, as nitre, crem-tartar, bicarbonate of potash, colchicum, juniper, squill, broom, and buchu, have all been resorted to; purgatives, as aloes, gamboge (also diuretic), potash and soda laxatives, magnesia, etc., have also been resorted to and relied upon. To fulfil the second indication tonics are to be most relied upon, as iron, arsenic, quinine, strychnine; and the ordinary vegetable tonics, as cascarilla, cusparia, gentian, etc. Iodide of potassium often fulfils both indications. Combinations of various kinds are to be resorted to according to the varying requirements of the patient. Dover's powder, or pil. al. comp., or Plummer's pill at night, and a mixture of pot. iodide and sarza, is popular, or a mixture of guaiacum and muriate of ammonia may be supposed in the cold form of rheumatism. Donovan's solution is useful when there is any suspicion of syphilis, or a mixture of Valangin's sol., hyd. bichlor., and muriate of iron. Alkalies are often needed pretty freely, and may be given with Fowler's solution or any light form of iron; from their destructive and debilitating action, they should always be guarded by iron or some tonic, and when the acidity is great are of the greatest service. The pot. bicarb. with pot. iod. in a vegetable infusion, is a good form. Cod-liver oil is often of the greatest value; and in rheumatic gout little can be done without it and iron. Potash with colchicum in infusion of cinchona is a useful combination. Colchicum and quinine in pill are great favourites in the treatment of muscular rheumatism, as wry-neck, etc. Crem-tartar (*potus imperialis*) and ferri pot. tart. form a most efficient tonic in cases of mild acidity. The syr. fer. quin. et strych. after food, and some potash before, is occasionally most useful. Where there is a decidedly neuralgic element, tonics, and most especially nervine tonics, are clearly indicated. In mixed cases, I have found a pill of guaiac., arsenic, and iron in pil. al. et myrrh, most efficacious; the guaiacum often being slightly cathartic itself. Cit. fer. et quin. with strychnia, form a nice tonic. Amm. carb., with or without pot. bicarb., and fer. am. cit., go well together. Even when there is evidently a syphilitic

taint, it happens sometimes that the pain will yield to general tonics, and the nodes to pl. acet. and opium, that have resisted a more specific treatment. When there is a suspicion of lithiasis the treatment must be arranged accordingly. For instance, opium and mercury must be carefully withheld, and preparations of the solanaceæ or potass. bromide given instead. To show the susceptibility to mercury in cirrhotic kidney, I may adduce the following case:—An old woman, with confirmed jaundice and a liver reduced in bulk, got four grains of hyd. biniod. in twenty-four days. The urine was laden with bile, and in hunting for bile-stained objects, I came on myriads of granular casts. The discovery made me at once stop the mercury, but already there was decided though slight salivation. Still more serious consequences have followed the administration of opium and morphia in these conditions of the kidney. Some patients, however, take them with impunity, while others are most susceptible; it is well, therefore, to be most guarded in their use in renal disease. The advance of knowledge may shortly make clear where the variation lies. The amount of kidney affected has apparently something to do with it. Whenever patients are found with a susceptibility to opium and mercury, a suspicion of renal mischief is at once generated. Iron in this condition is our mainstay. Buchu is of service where we wish to make a permanent impression on the kidney. When the heart is affected, the addition of digitalis will be found to aid materially. When there is any œdema, a purgative of pulv. jal. co., or even better, gamboge in crem-tartar, is indicated. Uric acid forms, with potash, a highly soluble salt, and in these conditions potash is a true hæmatic as well as diuretic. Potash and iron are best combined, and form the basis of treatment in these cases. Bearing in mind the diminished power of the kidney to eliminate, animal food should be given sparingly, and eggs, milk, and a farinaceous diet supposit. Cod-liver oil and a judicious stimulation may even be necessary, and the relation of fats to neuralgiæ must not be lost sight of. Warm clothing, flannel to the skin, are imperative. Scudamore advocates the use of “fleecy hosiery.” Sudden changes of temperature are the great source of danger, and the utmost care must be taken at these times; they are a source of great discomfort to the true rheumatic, but to the sufferer from renal disease they are imminently dangerous. In the pains of locomotor ataxy no relief can usually be afforded; the only plan, that of reducing the brain’s susceptibility to the painful impressions produced by the disintegrating process, is not successful. This melancholy condition admits of no relief by art. Between the hopeless pains of locomotor ataxy, the dangerous and insidious condition of granular kidney, and the comparatively harmless and hopeful condition of genuine chronic rheumatism, we should strive our utmost to form a diagnosis, as on it hinges the widely different prognosis, and the equally varying treatment.

